

Report on the Global HIV/AIDS Epidemic

December 1997

UNAIDS Global HIV/AIDS Surveillance WHO

Surveillance of HIV/AIDS and STDs is conducted as a joint effort of UNAIDS and WHO. The data in this report have been compiled by the UNAIDS/WHO Working Group on Global HIV/AIDS and STD Surveillance in collaboration with National AIDS Programmes.

Global summary of the HIV/AIDS epidemic, December 1997 ([figure 1](#))

People newly infected with HIV in 1997 (figure 2)	Adults	5.2 million
	Women	2.1 million
	Children <15 years	590 000
	Total	5.8 million
People living with HIV/AIDS (figure 3)	Adults	29.5 million
	Women	12.1 million
	Children <15 years	1.1 million
	Total	30.6 million
AIDS deaths in 1997	Adults	1.8 million
	Women	820 000
	Children <15 years	460 000
	Total	2.3 million
AIDS death since the beginning of the epidemic	Adults	9.0 million
	Women	4.0 million
	Children <15 years	2.7 million
	Total	11.7 million
AIDS orphans¹ since the beginning of the epidemic (figure 4)		8.2 million

Global Estimates

HIV: close to 16 000 new infections a day

New estimates show that infection with the human immunodeficiency virus (HIV) which causes AIDS is far more common in the world than previously thought ([see table](#)). UNAIDS and WHO estimate that over 30 million people are living with HIV infection at the end of 1997. That is one in every 100 adults in the sexually active ages of 15 to 49 worldwide ². Included in the 30 million figure

are 1.1 million children under the age of 15. The overwhelming majority of HIV-infected people - more than 90% - live in the developing world, and most of these do not know that they are infected ([see section](#)).

This year's estimates also point up the continuing rapid spread of HIV. Altogether, 5.8 million people are believed to have acquired HIV infection in 1997, 590 000 of them children. Overall, that is equivalent to nearly 16 000 new infections every day of the year, including those in children infected at birth or through breastfeeding.

Assuming that currently unbroken trends in many parts of the world will continue, it is estimated that more than 40 million people will be living with HIV in the year 2000.

An estimated 2.3 million people died of AIDS in 1997. These deaths represent a fifth of the total 11.7 million AIDS deaths since the beginning of the epidemic in the late 1970s. Of the people who died of AIDS this year, 46% were women and 460 000 were children.

Regional round-up

It is becoming increasingly clear that, although almost every country is touched by HIV, the virus spreads very differently in different parts of the world. There are even important differences in patterns of spread in different communities and geographic areas within the same country.

Regional HIV/AIDS statistics and features, December 1997

Region	Epidemic started	Adults & children living with HIV/AIDS	Adult prevalence rate ³	Cumulative no. of orphans ⁴	Percent women	Main mode(s) of transmission ⁵ for those living with HIV/AIDS
Sub-Saharan Africa	late '70s-early '80s	20.8 million	7.4%	7.8 million	50%	Hetero
North Africa, Middle East	late '80s	210 000	0.13%	14 200	20%	IDU, Hetero
South and South-East Asia	late '80s	6.0 million	0.6%	220 200	25%	Hetero
East Asia, Pacific	late '80s	440 000	0.05%	1 900	11%	IDU, Hetero, MSM
Latin America	late '70s-early '80s	1.3 million	0.5%	91 000	19%	MSM, IDU, Hetero
Caribbean	late '70s-early '80s	310 000	1.9%	48 000	33%	Hetero, MSM
Eastern Europe & Central Asia	early '90s	150 000	0.07%	30	25%	IDU, MSM
Western Europe	late '70s-early '80s	530 000	0.3%	8 700	20%	IDU, MSM
North America	late '70s-early '80s	860 000	0.6%	70 000	20%	IDU, MSM, Hetero
Australia & New Zealand	late '70s-early '80s	12 000	0.1%	300	5%	IDU, MSM
TOTAL		30.6 million	1.0%	8.2 million	41%	

Infection reaches unprecedented levels in sub-Saharan Africa ([figure 5](#))

Sub-Saharan Africa is the region with the fastest-moving epidemic. The African epidemic has also been the most underestimated one up to now ([see box](#)). Now thought to have fully two-thirds of the total world

number of people living with HIV, sub-Saharan Africa as a whole has reached the unprecedented level of 7.4% of all those aged 15 to 49 infected with HIV.

Unprotected sex between men and women accounted for most of the 3.4 million new HIV infections estimated among adults in sub-Saharan Africa in 1997. In addition, high fertility combined with poor access to information and services for the prevention of mother-to-child transmission resulted in some 530 000 infected children being born to mothers with HIV - around 90% of the world total.

Although heterosexual transmission accounts for most infections throughout Africa, levels of infection vary widely across the continent.

Southern Africa continues to be the part of the continent worst affected by HIV. By early 1997, the Government of South Africa estimated that 2.4 million South Africans were living with HIV, up by more than a third over 1996. In Botswana, the proportion of the adult population living with HIV has doubled over the last five years. In 1997, 43% of pregnant women tested in the major urban centre of Francistown were HIV-positive. In Zimbabwe, infection was estimated at one in five adults in 1996. In Harare, 32% of pregnant women were already infected in 1995; in Beit Bridge, another major city, the proportion shot up from 32% in 1995 to 59% in 1996. Although levels in cities were slightly higher than in rural areas, the difference was not great. In one town near the South African border with a large population of migrant workers, 7 pregnant women in 10 tested HIV-positive in 1995.

In general, West Africa has seen its rates of infection stabilize at much lower levels than in East and Southern Africa. However, some of the most populous countries in West Africa are the exception to this rule. For example, the National AIDS Programme estimates that 2.2 million people are currently living with HIV in Nigeria, a country whose response to the epidemic needs strengthening.

East Africa was one of the first areas to suffer a massive regional epidemic, and one country in the region, Uganda, was among the first to respond with open and concerted efforts to prevent the spread of the virus. For Uganda, this seems to be paying off. 1997 data currently being analysed show that the proportion of Ugandan adults infected is continuing to drop. All three of the surveillance sites for which figures are now available show infection levels of between 5% and 9%, representing a decrease of about one-fifth compared with 1996. The fall has been particularly marked in the younger age groups, which is in line with behaviour studies showing that young people nowadays are adopting safer sexual behaviour - later sexual initiation, fewer partners, more condom use - than was common a decade ago.

Infection rates in Asia are lower than Africa's (figure 6), but the numbers are large

The diversity within Asia is greater even than that in Africa. Levels of infection vary enormously, and so do routes of transmission. Often there are a number of different epidemics running concurrently within a single country. New genetic typing procedures (which allow researchers to investigate how different strains of the virus are spreading through the population) show that there is often remarkably little overlap between the HIV epidemics among injecting drug users and sex workers, for instance.

The epidemic is newer in Asia than in Africa, and only a few countries in the region have developed sophisticated systems for monitoring the spread of HIV. So estimates of HIV in Asia often have to be made on the basis of less information than in other regions. Because over half of the world's population lives in the region, small differences in rates can make huge differences in the absolute numbers of people infected.

The Government of China estimated that at the end of 1996 up to 200 000 people were living with HIV/AIDS. According to some estimates, this figure may have doubled by the end of 1997. At present, there are two major epidemics under way in China. One is in injecting drug users in the mountainous southwest of the country. The other, newer epidemic is now surfacing among heterosexuals, especially along the prosperous eastern seaboard where prostitution is re-emerging as the gap grows between rich and poor. The warning signs of high-risk behaviour are worryingly clear: sexually transmitted diseases (STDs) have shot up in recent years, and there

are no suggestions that the upward trend will be broken.

In India, infection rates, at under 1% of the total adult population, are still low by the standards of many countries, although well over 10 times higher than in neighbouring China. Surveillance is patchy, but all indications are that between 3 and 5 million people in India are living with HIV. Even at the bottom of that range, India is the country with the largest number of HIV-infected people in the world.

Recent testing of pregnant women in Mumbai shows infection rates around 2.4% in 1996. In Pondicherry, the rate among pregnant women is around 4%. Among truck drivers in the southern state of Madras, HIV infection quadrupled from 1.5% in 1995 to 6.2% just one year later. In the northeastern state of Manipur, where the epidemic took off quickly among male drug injectors, some drug clinics were registering HIV rates of as high as 73% in 1996.

There is limited information about HIV infection in other parts of south Asia, but it is clear that many people are having unprotected sex with non-monogamous partners. A recent study among sex workers in Bangladesh showed that 95% had contracted genital herpes, mostly from their clients, while 60% had syphilis.

Rates of HIV infection remain low in several southeast Asian nations. In Indonesia, Malaysia, the Philippines and Singapore, for instance, infection rates are well under 1%. However, other countries in the region show much higher levels of HIV spread. The reasons for these differences are not entirely clear. Nor is there any assurance that currently low rates will remain low, given the widespread occurrence of risk behaviour including commercial sex and, in some places, drug injecting.

Thailand, which has experienced what is probably the best-documented epidemic in the developing world, is continuing to produce evidence of a fall in new infections, especially among sex workers and their clients. These are the groups who have accounted for the majority of the some 750 000 persons currently infected, representing 2.3% of the adult population. The decrease in new infections is the outcome of concurrent and sustained prevention efforts aimed at increasing condom use among heterosexuals, boosting respect for women, discouraging men from visiting sex workers, and offering young women better educational and other prospects to discourage their entry into commercial sex. HIV rates among Thailand's injecting drug users have stabilized at a relatively high level (around 40%), and a survey among men who have sex with other men in northern Thailand reported low AIDS awareness and condom use.

Elsewhere in southeast Asia the picture is mixed. It is bleakest in Cambodia, where 1 in 20 pregnant women, 1 in 16 soldiers and policemen and 1 in 2 sex workers tested positive in sentinel HIV surveillance. While condom use has grown very rapidly (condom sales have risen from virtually nothing to around a million units a month in the space of under three years) commercial sex remains very common: in a recent survey three-quarters of respondents in the military and the police force and two-fifths of male students said they had visited a sex worker in the last year. Viet Nam and Myanmar are also seeing a rapid spread of HIV. In Myanmar, HIV infection among sex workers rose from 4% in 1992 to over 20% in 1996, while two-thirds of injecting drug users are infected. Among pregnant women in the general population, an estimated 2% are infected.

Overall, about 6.4 million people are currently believed to be living with HIV in Asia and the Pacific - just over 1 in 5 of the world's total. By the end of the year 2000, just three years from now, that proportion is expected to rise to 1 in 4. Around 92 000 children now live with HIV in Asia.

Latin America and the Caribbean: neglected groups and a window of opportunity

In Latin America the picture is heterogeneous. For the most part, HIV is concentrated in neglected populations living on the social and economic margins of society. The epidemic has taken its greatest toll on men who have sex with men and injecting drug users. Systematic data collection is difficult in these groups and information is rather scarce as of today. Nevertheless,

studies on Mexican men who have sex with men show that, on average, as many as 30% of them may be living with HIV. Rates in drug users vary from 5% to 11% in Mexico to close to 50% in Argentina and Brazil. In some places there is clear evidence of increasing spread among poorer and less educated parts of the population. For example, in Brazil most of the early AIDS cases were in individuals with secondary or university education; today 60% of cases are in people with primary schooling or less.

Rising rates in women show that heterosexual transmission is becoming more prominent. In Brazil, the male/female ratio of AIDS cases has dropped from 16:1 in 1986 to 3:1. Although HIV rates in pregnant women are still comparably low in general, they have reached levels of 1% in Honduras and more than 3% in Porto Alegre, Brazil. Rates are substantially higher in the Caribbean. Haiti found over 8% of pregnant women carrying the virus already in 1993; the same prevalence was reported from one surveillance site in the Dominican Republic in 1996.

For the most part, however, this region of the world still has an important window of opportunity: it is not too late to stop HIV from spreading to the population at large. This will require a much greater focus on meeting the special prevention needs of marginalized and impoverished populations.

As limited as the region's epidemic has been thus far, AIDS has already had a major impact. In Mexico, AIDS was the third leading cause of death in men between 25 and 34 years of age in 1995 with increasing trends. In the state of São Paulo, Brazil, AIDS became the leading cause of death in 20 to 34-year-old women in 1992. In Latin America and the Caribbean as a whole, AIDS has already overtaken traffic accidents as a cause of death. However, a recent drop in AIDS mortality - similar to that seen in Western Europe and North America (see below) - has been recorded in São Paulo and is attributed to the increasing use of antiretroviral therapy.

Drug use drives HIV in Eastern Europe

Drug injection is behind the dramatic surge in HIV infection in several Eastern European nations, accounting for the majority of the 100 000 new infections estimated to have occurred in 1997. In Ukraine, where around 70% of infections have been in drug users over the last three years, some 25 000 cases of HIV infection have been reported so far, half of them in 1997. It is possible that a similar pattern will be seen elsewhere in the region. Russian officials estimate there are about 350 000 regular drug users in the country, many of them sharing injecting equipment.

The potential for sexual spread also exists. In Russia, Belarus and Moldova, new cases of syphilis rocketed from very low levels in the late 1980s to well above 2 per 1000 population by 1996, with continuously increasing trends. An untreated sexually transmitted disease not only makes HIV (when present) spread much more easily from one partner to the other but is important as a marker of potential HIV spread because it has the same transmission route - unprotected sex (intercourse without a condom).

AIDS is falling in the industrialized world

The growing gap between the developed and the developing world concerns not only the scale of HIV spread but mortality from AIDS. In North America, Western Europe, Australia and New Zealand, newly-available antiretroviral drugs are reducing the speed at which HIV-infected people develop AIDS.

In Western Europe evidence suggests that new AIDS cases will drop by around 30% in 1997 compared with 1995, before antiretroviral treatment became available. The fall is greatest in countries in which infection has been concentrated in homosexual men, in whom HIV rates began dropping 5/10 years earlier. This shows that the decline in AIDS cases is often the combined result of better prevention and better treatment. Only in Portugal and Greece, where unsafe drug injecting is the main mode of transmission, are new AIDS cases still showing substantial rises compared with a year ago.

In the United States, newly-published figures indicate that the first-ever annual decrease in new AIDS cases - 6% - occurred in 1996, and an even bigger decrease is expected in 1997. Again,

the largest fall - a drop of 11% - was in homosexual men, the very group which sought and benefited from the most open exchange of information about the risks of unprotected sex in the early years of the epidemic. In some disadvantaged sections of society, however, AIDS continues to rise. Among African-Americans, new AIDS cases rose by 19% among heterosexual men and 12% among heterosexual women in the USA in 1996. In the Hispanic community, there were 13% more cases among men and 5% more among women than a year earlier. This is partly because these communities may find it hard to access the expensive new drugs that could stave off the onset of AIDS. It is partly, too, because prevention efforts in minority communities, where transmission is often through heterosexual intercourse and drug injecting, have been less successful than in the predominantly well-educated and well-organized white gay community.

It is estimated that 30 000 Western Europeans were newly infected with HIV in 1997. Antiretroviral treatment given to women during pregnancy and the availability of safe alternatives to breastfeeding kept mother-to-child infection low - it is estimated that fewer than 500 children under the age of 15 were infected with HIV in 1997. North America estimated it had around 44 000 new HIV infections in 1997. As in Western Europe, transmission from mother to child was low, with fewer than 500 new cases.

AIDS wipes out gains in life expectancy and child survival

AIDS is systematically cutting down life expectancy in the countries where the disease is most common. The gains achieved over the last few decades in much of the developing world will in some places be cancelled out by HIV. Life expectancy in Botswana rose from under 43 years in 1955 to 61 years in 1990. Now, with between 25% and 30% of the adult population infected with HIV, life expectancy is expected to drop back to levels last seen in the late 1960s. By the end of the decade, Zimbabwe will see 10 years wiped off the life expectancy of a child born in 1990. In Uganda, one study in a rural area measured the lifespan of the population as a whole and compared it with that of the people who were not HIV-infected. It concluded that where some 8% of the population was HIV-positive, the presence of AIDS in the community cut overall life expectancy by 16 years.

In many countries AIDS is the leading cause of death in adults. In the United States, after combination therapy to slow down the progression of HIV disease was introduced in 1996, AIDS dropped into second place among leading causes of death in people aged 25/44 for the first time since 1992. Accidental injury took over in first place. In rural Uganda, AIDS accounted for 41% of adult deaths in one study. For men between 25 and 44, and for women between 20 and 44, AIDS caused 7 out of every 10 deaths. In trading centres which are home to large numbers of younger adults, a third of whom are HIV-infected, nearly 9 out of 10 adult deaths are HIV-related. In Namibia, HIV causes nearly twice as many deaths across all ages as malaria, the next most common killer.

The high mortality due to HIV/AIDS also has major impacts on families. It is estimated that since the beginning of the epidemic more than 8 million children have lost their mothers to AIDS when they were less than 15 years old - and many of these also lost their fathers. It is estimated that this figure will almost double by the year 2000.

The worst is still to come. Since the beginning of the epidemic, it is estimated that 11.7 million people around the world have died of AIDS and HIV-related causes. That is just a third of the number currently infected. Indeed, half as many people were infected this year alone as have died in the whole epidemic to date. Because the vast majority of people living with HIV are in the developing world, access to antiretrovirals is often difficult or impossible. And these drugs do not constitute a cure: they are not effective in everyone, and at this point it is impossible to say how long their effects will last. Thus, many if not most of the 30 million people currently infected may well die in the relatively near future, perhaps within the next decade.

Developing nations have made great strides in increasing infant and child survival in recent decades. These gains, too, are threatened by HIV. Already, a quarter more babies under 12 months old in Zimbabwe and Zambia are dying than would be the case if there were no HIV. By 2010, Zimbabwe's infant mortality rate is expected to rise by 138% because of AIDS, and its under-five mortality rate by 109%. In Côte d'Ivoire, child mortality will rise by over two-thirds.

Young people at risk

In some parts of the world, the proportion of the total adult population living with HIV/AIDS has stabilized or begun to fall. While this is good news, it can hide an unpleasant truth: new infections in the younger age groups can continue unabated or even go on rising as the overall proportion of people living with HIV/AIDS falls.

High infection rates and risk behaviour among some young people

In most parts of the world, the majority of new infections are in young people between the ages of 15 and 24, sometimes younger. In one study in Zambia, over 12% of the 15 and 16-year-olds seen at antenatal clinics were already infected with HIV.

Girls appear to be especially vulnerable to infection, but Uganda has recently shown encouraging evidence that in some city sites infection rates have halved among teenage girls since 1990. Even there, however, the rates remain unacceptably high, with up to 1 pregnant teenager in 10 testing HIV-positive. That rate is six times higher than in boys of the same age.

In South Africa, the proportion of pregnant 15/19-year-olds infected with HIV rose to 13% in 1996 from around half that level just two years earlier. In Botswana the infection rate stood at 28% for the same group in 1997. In Maharashtra state in India, where the epidemic is in its early years, some 3.5% of pregnant teenagers tested HIV-positive in a recent study.

What is abundantly clear is that some young people all over the world engage in risky sexual behaviour. In Mongolia, there has been a recent jump in sexually transmitted diseases in children under 15, indicating that they are exposed to unprotected intercourse. One study shows that since 1994, STDs in those under 15 have shot up more than ten-fold. In Namibia, 37% of 12/18-year-olds reported that they had had sex, nearly half of them with more than one partner. Most said that they believed their own partners had had other partners, too. In Tanzania, 12% of teenage males and 37% of 20/24-year-olds reported that they had multiple sex partners in the last year. In Mali, 2 out of 5 sexually active boys in their teens said they last had sex with a prostitute or casual partner. In the United States, some studies indicate that genital herpes has jumped more than four-fold among white teenagers since the 1970s, with close to 1 in 20 now infected. Among white Americans in their 20s, the rate is 1 in 7.

Sometimes, young people know of the risks of unprotected sex but feel AIDS could not possibly happen to them. In Malawi, most young men and women know how HIV is transmitted and how it can be prevented. When asked, however, many said they felt invulnerable to the virus. Some 90% of teenage boys said they were at no risk or at minimal risk of infection, even though nearly half of them reported at least one casual sex partner over the last year, and condom use was low.

Even in countries such as Thailand - which has been among the most successful in encouraging young people to adopt safer sexual behaviour and has been rewarded by seeing a marked fall in both HIV infection and other STDs - there are groups of young people that fall through the net, such as those living on the street.

More education translates into lower risk

In many countries, young people are denied access to education about HIV including safe behaviour skills, or are unable to buy condoms or attend STD clinics. This is usually because older adults believe such education and services will actually encourage young people to increase their sexual activity.

In fact, the reverse is true according to a newly-published UNAIDS review of data from four continents. Good-quality sex education helps delay first intercourse and leads to lower levels of teenage pregnancy and STDs. In the years after Switzerland launched an active and very open campaign aimed at informing young people about healthy sexual behaviour, the proportion of 17-year-old girls and boys who never had sex - a proportion that had been dropping for many years - began to show a marked rise. The same trend toward postponement of first sexual

intercourse is now being observed in the USA and in Uganda.

Educational efforts are also resulting in greater condom use among those who have become sexually active. Thailand and Uganda have already been mentioned. In Tanzania, 16% of sexually active teenage women had used a condom in 1996. While this may seem woefully low, it is certainly a vast improvement on the 5% recorded in 1990. The proportion of teenage boys who had ever used a condom rose from 14% to 38% in the same period. In Zambia, too, condom use has risen from very low levels in the 1980s. In 1996 about one-third of sexually active teenage girls nationwide reported having used a condom - a level previously reported only from the capital Lusaka, where condom use has always been highest. In Switzerland, levels of casual sex among young people have remained more or less constant since the late 1980s, but consistent use of condoms with those partners has risen four-fold - a more impressive increase than seen in older people.

Over 27 million do not know they are infected

UNAIDS estimates that of the some 30 million people currently living with HIV, the vast majority have no idea they are infected. As with so many other features of the epidemic, when it comes to knowledge of HIV status there is a gaping divide between the developing and industrialized world.

In the United States, the Centers for Disease Control and Prevention (CDC) estimate that two-thirds of people living with HIV know about their infection. In Germany, the proportion of AIDS patients who knew their HIV status at least six months before an AIDS diagnosis remained steady at close to three-quarters in 1994 and 1995. Since 1995, when drugs that can delay the onset of AIDS came onto the market, the proportion has actually dropped to two-thirds. This is because people who knew their status early have already been treated and have been able to delay the onset of AIDS. People who do not know their status are more likely to go on and develop AIDS. The availability of treatment is a powerful incentive to get tested early.

In the developing world, where the epidemic is increasingly concentrated, the picture is very different. HIV testing is done mostly for purposes of surveillance, which involves very small population samples and is done "anonymously" (with no identification by name of those tested). Few people have any hope of treatment, so they feel little incentive to get tested. But even those who would want to know may not be able to find out. In many countries, there simply are no voluntary testing and counselling facilities; people have no acceptable way of learning if they are HIV-infected. An ongoing study at a rural hospital in South Africa suggests that only 2% of people who are HIV-positive know their status. The situation in urban Kenya seems to be as bad. Of 63 randomly chosen women who tested HIV-positive in one study, just one was already aware that she was infected.

The fact that current testing procedures usually require at least two visits to a test site further complicates access to testing. This can be difficult or expensive for people living in isolated areas. In rural South Africa, just 17% of the people who asked to be tested came back for the result and the advice and support that goes with it. When an on-the-spot test was tried, nearly everyone (96%) chose to know the result.

Since the epidemic is concentrated in the developing world, a conservative estimate might suggest that 9 out of 10 infected people in the world do not know their HIV status. At current estimates, that would suggest there are over 27 million people in the world today who have no idea they are infected.

There are many reasons why HIV testing and counselling for those who want to know their infection status should become part of the broad package of interventions used for AIDS prevention, care and support. Increasingly, ways are being found to delay symptomatic HIV disease including the late stage called AIDS, and to prevent or treat the infections which afflict people whose immune systems have been damaged by the virus. Not all of these treatments are prohibitively expensive. The earlier people know they are infected, the greater the opportunity for them to access treatment - or put pressure on their communities and countries for improved access, where this is inadequate. Another benefit would flow to individuals and their families. The earlier individuals are aware of their infection, the better they can make

informed and responsible decisions about childbearing, transmission to spouses or partners, and plans for their family's welfare after they fall ill or die.

Perhaps the most important benefit of self-knowledge is that it helps unmask the invisible epidemic and permits a genuine community response. The experience of the past decade shows that as long as HIV spreads silently and unnoticed, it remains at best a theoretical threat to people and does not get taken seriously. If individuals become aware of their infection early on, while they are still relatively healthy, this would give them the time and energy to support one another as well as alert their community to the epidemic, helping others avoid the disease or cope with its consequences.

However, these benefits to individuals, families and communities are realistically achievable only where people feel safe enough to find out whether they are infected. Efforts by governments and civil society to combat rejection and discrimination directed at people with HIV are vital.

Improved estimation techniques reveal epidemic is worse than previously thought

These newly-released figures reveal that there are about one-third more people living with HIV than was estimated in December 1996. There are two reasons for this increase. First, new infections are occurring at an alarming rate - some 16 000 infections a day have added 5.8 million HIV infections to the total in 1997 alone. Secondly, it now appears that previous calculations grossly underestimated the rate of transmission, particularly in sub-Saharan Africa where the bulk of infections are concentrated.

Why do estimates change?

Estimates are based on certain assumptions about the start of the epidemic, the rate of new infections in urban and rural areas, the time between infection and death, and the maximum level of infection in the population. Until a few years ago these data were available for only a handful of countries. It was assumed that the pattern of infection in other countries in the same region would follow that seen in countries where data were available. It seemed reasonable, then, to construct models to estimate the epidemic region by region.

This was first done for 1995. Information about levels of infection dating from 1994 or earlier was collected from as many countries as possible. From the proportion of people currently infected in various sentinel groups in each region and other available data, models were constructed to estimate the rate of growth of the epidemic and the total number of people currently infected, region by region. Extrapolations from this model were used to calculate the magnitude of the epidemic in 1996. This yielded an estimate of 3.1 million new infections over the year and brought to 22.6 million the number of people thought to be living with HIV.

By 1997, far more data were available and it became clear that there were huge differences in the way the epidemic was developing in different countries and communities within the same region. So this year, UNAIDS improved its estimation techniques. The regional models were replaced by separate models constructed for each country, which were based on better measures of levels of infection and took into account the variations in patterns of infection, in survival time, and so on. New estimates were made country by country, and then added together to yield new regional totals. The resulting estimates, given in this report, showed that global levels of infection in 1996 had been underestimated by over a third.

New infections in 1996 were in fact closer to 5.3 million than to the 3.1 million reported last year. The total number of people living with HIV in 1996 was in the range of 27 million, rather than 22.6 million as previously believed. That means that although this year's estimates are still shockingly high, there has been nothing like the doubling of new cases that might be suggested by looking at last year's published figures. Accounting for previous underestimates, there have been around 9% more new infections this year than last, and the number of people living with HIV has grown by 13%.

Where did the differences appear?

To see how much of the new total was due to a rise in new infections and how much due to underestimates of previous levels, UNAIDS recalculated the totals for 1996 using the new estimation methods. The results showed that previous estimates were correct for most of the world.

The difference was found largely in sub-Saharan Africa. While the number of people living with HIV/AIDS there was originally estimated at 14 million in 1996, new information shows that the regional total at that time was probably closer to 18.6 million, as against 20.8 million in 1997. New infections in 1996 would, on the basis of current information, have been estimated at 3.8 million in Africa alone.

Why was infection in Africa underestimated by so much?

At the time the regional model for sub-Saharan Africa was constructed, few countries had much reliable data and some, notably Nigeria and South Africa with their large populations, had virtually none. The country with the best surveillance system was Uganda, and that showed that infection rates were beginning to level off, with new infections dropping in younger age groups. This was taken as a model for the whole region.

Unfortunately, the epidemic in other countries has not followed the pattern seen in Uganda. In many, infection rates have continued to climb beyond the levels thought possible in 1994, when data for the regional models used for previous estimates were collected.

Are the new estimates definitive?

The figures given in this report each represent a best estimate out of a range, rather than a precise number. UNAIDS and WHO believe that these new estimates are as accurate as is possible to generate with available data. But there is much that is still not known about HIV. More information about the course of infection, its impact on fertility and mortality, and the transmissibility of different strains of the virus will change some of the assumptions made in the current models. A clearer picture of current levels of infection, particularly for countries with large populations and inadequate data such as India, will improve future estimates. And the efforts governments and communities put into changing the course of the epidemic in their countries should have an impact on the rate of new infections and so on estimates and projections.

UNAIDS and WHO will continue to improve estimation methods as new information becomes available.

1. Defined as HIV-negative children who lost their mother or both parents to AIDS when they were under the age of 15.
2. In this report, adults are defined as those aged 15-49, children as those under 15. To make it easier to compare prevalence rates (proportion of people currently living with HIV/AIDS) between countries and regions, the total number of adults aged 15-49 living in a given country or region is used as the denominator.
3. The proportion of adults living with HIV/AIDS in the adult population (15 to 49 years of age).
4. Orphans are defined as HIV-negative children who lost their mother or both parents to AIDS when they were under age 15.
5. MSM (men who have sex with men), IDU (injecting drug users), Hetero (heterosexual transmission).